

OWNER: Bayberry Estates
DRILLER: J. T. Ellington
COUNTY: King George (Dahlgren)

VDMR #1306
WWCR #63
TOTAL DEPTH: 1050'

GEOLOGIC LOG

0-240 No sample.

Aquia Formation (240-300')

240-255 Sand — dark-gray with greenish cast ("salt- and- pepper" sand); slightly argillaceous and silty; medium-grained, moderately sorted; pelletal, fresh black glauconite (about 50%) and clear to green-stained, subangular to subrounded quartz (about 50%); accessory mineral suite includes undetermined amounts of magnetite, micas, orange and pink garnet, brown, and green epidote, pyrite in fine-grained lumps and in massive tubular forms, tourmaline, zircon; moderate amount abraded, chalky pelecypod fragments; foraminifera moderately abundant (Robulus and Nonion).

255-270 As above.

270-285 As above.

285-300 Sand — gray ("salt- and- pepper" sand); slightly argillaceous and silty; fine-grained, moderately sorted; pelletal, fresh black glauconite (30-40%) and angular to subangular, clear to green-stained quartz (60-70%); small amounts yellowish, partially altered microcline and dark-green biotite; accessory mineral suite includes magnetite, garnet, muscovite, zircon, and pyrito-carbonaceous material; scattered, chalky pelecypod fragment and a few foraminifera.

Mattaponi Formation (?) (300-840')

300-315 Sand — brown; slightly argillaceous; medium- to coarse-grained, moderately sorted, subangular; quartz with about 10% glauconite; small amounts feldspar, magnetite, garnet, and greenish muscovite; scattered, chalky pelecypod fragments and foraminifera.

310-315 Sand — reddish-brown; coarse- to very-coarse-grained, well-sorted, subangular to subrounded; quartz with 5-15% slightly altered microcline and microperthite and 5% fresh, fine-grained glauconite; partial coatings of hematite on much of the quartz and feldspar; accessory minerals include magnetite, muscovite, and a little goethite and garnet.

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- 315-330 Sand — reddish-brown; medium- to coarse-grained, moderately sorted, subangular to subrounded; quartz with 5-10% slightly altered alkaline feldspar and up to 5% fine- to medium-grained, fresh glauconite; partial coatings of hematite common; small amounts magnetite, muscovite and iron oxides.
- 330-345 Sand — brown; very-fine- to very-coarse-grained, poorly sorted, subangular; arkosic quartz sand with small percentage fine-grained glauconite and trace of muscovite and magnetite; some hematite present as coatings on grains.
- 345-360 As above.
- 360-375 Sand — brown; moderately silty; very-fine- to coarse-grained, moderately sorted (skewed fine), angular to subangular; quartz with 5% white feldspar and 5% fresh greenish-black glauconite; traces of magnetite, pyrite, muscovite; a few pelecypod shell fragments.
- 375-390 Sand — brown; moderately argillaceous and slightly silty; fine- to coarse-grained, rather poorly sorted, angular to subrounded; slightly arkosic quartz sand with 5-10% fresh, greenish-black glauconite; traces of magnetite, muscovite, earthy hematite; small amount abraded chalky shell fragments, and a few foraminifera fragments.
- 390-405 Sand — brown; moderately argillaceous and silty; medium- to coarse-grained, fairly well sorted, subangular; slightly arkosic quartz sand with 10-20% fresh, greenish-black glauconite; small amounts magnetite, hematite, muscovite; scattered chalky shell fragments and a few foraminifera.
- 405-420 No sample.
- 420-435 Sand — brown; moderately argillaceous and silty; fine- to coarse-grained, moderately sorted, angular to subangular; slightly arkosic quartz sand with about 5% fresh, greenish-black glauconite; small amounts magnetite, hematite, muscovite; scattered chalky shell fragments and a few foraminifera.
- 435-450 As above.
- 450-465 As above — but with considerable very-coarse-grained sand, more poorly sorted, and with a trace of phosphorite.
- 465-480 Sand — brown; moderately argillaceous and slightly silty; very-fine- to coarse-grained, rather poorly sorted, angular to subrounded; slightly arkosic and glauconitic quartz sand; earthy hematite relatively abundant; a few foraminifera.

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- 480-495 Sand — brown; moderately argillaceous and slightly silty; very-fine- to coarse-grained, rather poorly sorted, angular to subrounded; slightly arkosic and glauconitic quartz sand; earthy hematite relatively abundant; a few foraminifera.
- 495-510 As above — but more argillaceous, less glauconitic.
- 510-525 Sand — brown; argillaceous (variegated clay), and slightly silty; medium- to coarse-grained, moderately sorted, subangular; slightly arkosic (microcline) quartz sand with about 5% fresh glauconite; abundant earthy hematite (clay fraction ?); small amounts magnetite, white chert, muscovite; a few chalky shell fragments and poorly preserved foraminifera.
- 525-540 As above — but much more argillaceous.
- 540-555 Clay — brown (variegated under microscope); sandy, glauconitic; earthy hematite (clay fraction ?) abundant; small amounts feldspar, white chert, and magnetite; a few chalky shell fragments.
- 555-570 As above.
- 570-585 As above.
- 585-600 As above.
- 600-615 As above.
- 615-630 As above.
- 630-645 As above — but darker colored, sandier; sparse fossil assemblage includes Robulus.
- 645-660 Sand — brown; argillaceous (variegated clay); very-fine- to very-coarse-grained, poorly sorted, subangular; quartz sand with about 5% fresh, greenish-black glauconite; earthy iron oxides abundant; trace of chalky shell debris.
- 660-675 As above.
- 675-690 As above.
- 690-705 Sand — brown; slightly to moderately argillaceous; medium- to coarse-grained, moderately sorted, subangular; quartz sand with about 10% gray to white microcline and micropertite, and 1-2 % glauconite, small amount earthy hematite; a few chalky shell fragments.

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- 705-720 Sand — brown; slightly to moderately argillaceous; medium- to coarse-grained, moderately sorted, subangular; quartz sand with about 10% gray to white microcline and microperthite, and 1-2% glauconite, small amount earthy hematite; a few chalky shell fragments.
- 720-735 As above — but more argillaceous (relatively drab brown clay).
- 735-750 Sand — brown; slightly argillaceous; fine- to coarse-grained, moderately sorted, angular to subangular; quartz sand with about 10% gray to white microcline and about 10% glauconite; small amounts earthy hematite, magnetite; scattered chalky shell fragments.
- 750-765 As above — but coarser grained.
- 765-780 Sand — brown; slightly argillaceous; fine- to coarse-grained, rather poorly sorted, subangular; slightly arkosic, slightly glauconitic quartz sand; small amount earthy hematite and trace of muscovite; small amount chalky pelecypod shell fragments.
- 780-795 Sand — brown; argillaceous; fine- to coarse-grained, rather poorly sorted, subangular; quartz sand with about 5% white microcline and 1% fresh glauconite; trace of muscovite; scattered chalky pelecypod shell fragments, and a few foraminifera.
- 795-810 As above.
- 810-825 As above.
- 825-840 As above.
- Potomac Group (840-1005')
- 840-855 Sand — buff; slightly argillaceous; medium-grained, well-sorted, angular; arkosic (about 10% fresh, white microcline) and small amounts of fresh glauconite, magnetite; and earthy hematite; trace of pyrite.
- 855-870 Sand — brown; moderately argillaceous and silty; medium- to coarse-grained, rather poorly sorted, subangular; quartz sand with about 5% each of feldspar and glauconite; small amount earthy hematite; traces of muscovite and magnetite; scattered chalky pelecypod shell fragments.
- 870-885 As above.
- 885-900 As above.

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- 900-915 Sand — brown; argillaceous (variegated clay) and silty; medium- to coarse-grained, rather poorly sorted, subangular; quartz sand with about 5% each of feldspar and glauconite; small amount earthy hematite; traces of muscovite and magnetite; scattered chalky pelecypod shell fragments.
- 915-930 Sand — brown; argillaceous; poorly sorted and variably rounded; slightly arkosic and glauconitic; small amount earthy hematite; traces of mica and platy black phosphorite; scattered chalky shell fragments, and a few foraminifera.
- 930-945 Sand — buff; medium- to coarse-grained, well-sorted, subangular; clean quartz sand with about 5% fresh white microcline and small amounts of earthy hematite, magnetite, and fine- to medium-grained greenish-black glauconite.
- 945-960 Sand — brown; slightly argillaceous; medium- to coarse-grained, fairly well sorted, subangular; quartz sand with about 5% fresh white microcline and small amount of fine-grained glauconite; trace of muscovite; trace of chalky shell debris.
- 960-975 As above — but with less feldspar and only a few grains of glauconite.
- 975-990 Sand — gray, with violet cast; medium- to coarse-grained, well-sorted, subangular; moderately arkosic clean quartz sand with a few grains of glauconite and trace of brown epidote.
- 990-1005 As above.
- 1005-1050 No sample.

GEOLOGIC SUMMARY

	<u>ROCK UNIT</u>	<u>TIME ROCK UNIT</u>
0-240	No sample	
240-300	Aquia Formation	Eocene
300-840	Mattaponi Formation (?)	Upper Cretaceous-Paleocene
840-1005	Potomac Group	Lower Cretaceous
1005-1050	No sample	

Virginia Division of Mineral Resources
Robert H. Teifke, Geologist
May 21, 1965